

*Special Topic:*

# The Northeast Groundfish Fishery Buyout Program

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## INTRODUCTION

Since the passage of the Magnuson-Stevens Fishery Conservation and Management Act and establishment of the Exclusive Economic Zone (EEZ) in 1977, the fishery for groundfish in the northeastern U.S. has been managed under three fishery management plans (FMPs) developed by the New England Fishery Management Council (Council) and NOAA's National Marine Fisheries Service (NMFS). From 1977 to 1982, the fishery was managed primarily by quotas for cod, haddock, and yellow-tail flounder. During this period, the stocks began rebuilding following historic overfishing by foreign fleets.

Even as the foreign fleets were being excluded from the EEZ, the U.S. domestic fleet was experiencing an unprecedented increase in new vessel construction. This increase was due, in varying degrees, to the economic opportunity created by both the displacement of the foreign fleets and increased stock abundance and to a suite of incentive programs (*i.e.* the Fishing Vessel Obligation Guarantee Program, and the Fishing Vessel Capital Construction Fund Program) to encourage replacement and new construction of fishing vessels. Furthermore, the increase in fleet size was not limited by the management plan.



**Maine-based trawler F/V Prowler was one of 79 vessels whose owners submitted successful bids for buyout funds.**

**Photo courtesy  
NOAA Fisheries NERO**

Trends in vessel construction and vessel entry into the northeast groundfish fishery are difficult to discern due to changing data collection protocols and inconsistent reporting over time. Additions to the U.S. domestic fishing fleet were routinely reported in the *Fisheries of the United States (FUS)* from 1964 to 1972. However, no distinction was made between newly constructed vessels and ves-

sels that may have been converted to fishing from some other use. By contrast, data on newly constructed vessels from 1973 to 1980 were reported in the *FUS* but numbers of vessels converted from other uses were not reported. Throughout this time series, whether any of the added or newly constructed vessels were ever used for fishing purposes were not reported. Data on vessel activity are

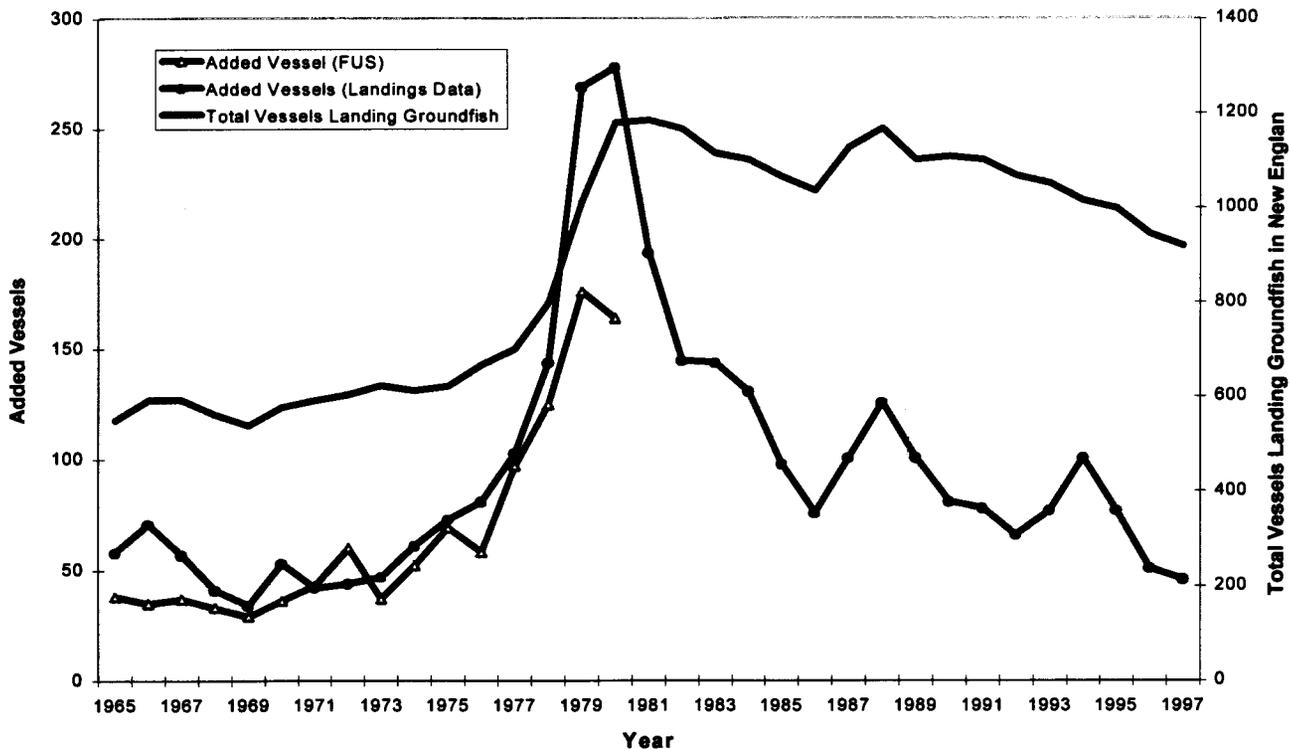


Figure 17. Additions to the New England fishing fleet and total number of vessels landing groundfish in Maine, Massachusetts, or Rhode Island, 1965-1997.

available from the NMFS weighout data from 1964 to 1997. These data can be used to determine in what year vessels entered the groundfish fleet but cannot be directly linked to the vessel construction data reported in the *FUS*. Nevertheless, the two data sources can be used to draw some inferences about the buildup in the northeast groundfish fleet that occurred between 1974 and 1984.

Figure 17 illustrates patterns of vessel construction (data from *FUS* are denoted by a line with triangle markers) and vessel entry into the northeast groundfish fishery over time. Due to database changes, a consistent time series could only be constructed using data on vessels and landings from three New England states (Maine, Massachusetts, and Rhode Island). These three states account for the majority of vessels and landings of groundfish in the northeast and are likely to be representative of the northeast region as a whole. The total number of identified unique vessels (*i.e.* fishing craft > 5 gross registered tons [GRT]) landing

in the New England region (solid line) as well as the total number of vessels > 5 GRT that were added to the landings data base in each year (line with circle markers) are reported in Figure 17.

Each series shows a consistent trend of relative stability in terms of total vessels and added vessels from 1965 until 1973. During this time, an annual average of 581 vessels participated in the New England groundfish fishery. Approximately 50 vessels that had not previously been identified in any prior year were added annually to the weighout landings data. However, in any given year, as new vessels were being added other vessels were leaving for a net annual average increase of nine vessels. Newly constructed or newly documented New England vessels from 1965 to 1973 averaged 38 vessels (*FUS*).

From 1974 to 1980 the northeast fishing fleet increased dramatically. New vessel construction peaked in 1979 at 176 vessels, an average annual increase of 22.3%. Similarly,

the number of vessels that were added to the landings data base increased at an annual rate of 31.1%, to 278 vessels in 1980. The total number of vessels recorded as having landed groundfish in New England was 1,185 in 1980, an average annual increase of 8.7%. Since 1980, the number of New England vessels landing groundfish has gradually declined at a rate of 1.4% per year, but remains at nearly twice that of the pre-Magnuson Act period.

The buildup in the northeast fishing capacity over these years resulted in an increasing number of vessels fishing on annual quotas. Without some basis for controlling the number of participants (for example limited entry or properly specified property rights), effort intensified and quotas were filled rapidly, leading to boom and bust market conditions and numerous management and enforcement problems. At the same time impacts on the resource were becoming evident. Growing dissatisfaction with catch quotas led to their removal and replacement with indirect controls on

fishing effort in 1982. These indirect controls (gear restrictions and minimum fish sizes) were implemented under what was called the Interim Plan. This plan was designed to provide adequate resource protection while a more comprehensive and effective approach could be developed. With the near doubling of the number of vessels in the New England groundfish fleet, however, such measures were not sufficient to control exploitation and groundfish stocks continued to decline.

The current Northeast Multispecies Fishery Management Plan or Multispecies Plan became effective in 1986. The Plan added seven more species to the management unit (three more species were added through the amendment process in 1991) and made a number of regulatory changes. However, the basic format of indirect effort control was retained. At present, ten of the species the Council manages under this plan are defined as regulated or "large mesh" species: cod, haddock, pollock, yellowtail flounder, winter or blackback flounder, witch flounder, American plaice, redfish, white hake, and windowpane flounder. The three remaining "small mesh" species are red hake, silver hake, and ocean pout.

Without limiting entry or direct effort controls, groundfish stocks became severely overfished and the resource declined to record low levels. In May 1994, NMFS implemented a major revision to the Multispecies Plan (Amendment 5), as proposed by the Council. Amendment 5 capped the number of vessels in the fishery through a limited access program, and controlled the amount of time many vessels in the fleet could spend at sea. Gillnet vessels were restricted, due to protection measures for harbor porpoise, and hook vessels were limited in the number of hooks allowed. These measures were designed to end overfishing (as defined prior to the 1997 Sustainable Fisheries Act).

Subsequently, the Council began to develop further modifications to the Multispecies Plan to rebuild the

depleted resource. Amendment 7 was proposed by the Council in early 1996 and was implemented by NMFS in July 1996. The key components of Amendment 7 were the adoption of a more rigorous days-at-sea (DAS) reduction schedule, the removal of most exemptions from DAS controls, and a more flexible adjustment process to respond to specific resource conditions.

Such measures imposed economic hardships; and several financial assistance programs were implemented to mitigate the economic impact that reduced time at sea would have on fishing industries and marine dependent communities. Through the Emergency Supplemental Appropriations Act of 1994, \$30 million was provided to U.S. Department of Commerce for the Northeast Fisheries Assistance Program. This program included the Fishing Capacity Reduction Demonstration Program (\$2 million), hereafter referred to as the pilot buyout program, the establishment of Fishing Family Assistance Centers, loan guarantees to improve fishing infrastructure, and research grants to develop opportunities for fishermen in aquaculture, underutilized species, and other businesses. Subsequently, \$25 million was made available through the Interjurisdictional Fisheries Act for the Fishing Capacity Reduction Initiative, hereafter referred to as the expanded buyout program. Results of these two buyout programs are described next.

## FISHING CAPACITY REDUCTION PROGRAMS

The buyout programs were developed and implemented by NOAA's Office of Sustainable Development (OSD) in two phases beginning with the pilot buyout program initiated in June, 1995. This program was designed to determine the level of interest in such a program and to test a variety of implementation protocols such as bidding procedures, scrap-

ping provisions, and eligibility and selection criteria. The pilot buyout program culminated successfully in February, 1996 with the purchase and disposal of 11 vessels having permits in the Northeast multispecies fishery. Based on a favorable review of the pilot buyout program, the OSD decided to proceed with an expanded version of the vessel buyout program. With relatively few changes to the protocols established under the pilot buyout program, the \$23 million expanded buyout program was initiated in September 1996 and by May of 1998, 68 vessels had been removed from the multispecies fishery through this program.

## Buyout Objectives

As stated in the Federal Register (June 22, 1995, 60:120:32504) the goal of the pilot buyout was "...to demonstrate that a vessel removal program can be successfully designed and implemented and that such a program can be an effective tool in the conservation and management of U.S. fisheries." Although this goal mentions conservation, the same Federal Register announcement also states that the purpose for the program was "...to address the needs of those directly affected by the decline of traditional fisheries in the Northeast." Thus, the dual purposes of 1) providing a means for distressed groundfishermen to exit the fishery, and 2) conserving the resource by permanently removing groundfish vessels and their related permits were part of the initial design and implementation of both buyout programs. The Federal Register notice for the expanded buyout program (August 28, 1996, 61:168:44300) reiterates these dual purposes by stating that the "...objectives are to provide grants to eligible fishermen adversely impacted by the groundfish fishery disaster, and to aid the long-term viability of the groundfish fishery resource through the reduction of active harvesting capacity at the lowest cost."

Table 24. Principal features of fishing capacity reduction programs

| Feature   | Pilot Buyout Program  | Expanded Buyout Program   |
|---|---|---|
| Eligibility: possession of multispecies limited access permit   | Allowable Amendment 5 permit types (of the 6 possible types):<br>1) Individual days-at-sea allocation<br>2) Fleet days-at-sea allocation<br>3) Gillnet permit | Any of the 7 limited access permit types under Amendment 7                                |
| Eligibility: capable of fishing for groundfish in federal waters under own power prior to application | Required  | Required  |
| Eligibility: have derived 65% or more of gross annual revenues from 10 regulated groundfish species   | For 3 of the 4 years from 1991-1994   | For 3 of the 4 years from 1991-1994   |
| Score formula used to rank applicants (lower score = higher rank)                                     | Bid divided by average annual groundfish revenue from the three highest years (1991-1994)   | Bid divided by average annual groundfish revenue from the three highest years (1991-1994) |
| If accepted, surrender all federal fishing permits  | Required  | Required  |
| If accepted, scrap vessel   | Required  | Transfers to eligible entities for nonfishing uses allowed                                |

## Design of Buyouts

An extensive series of public hearings were held in Northeast ports prior to both buyout programs to elicit support and ideas for designing the program. The resulting design of the buyout reflected many of the features and ideas generated by industry participation. The primary design features for the pilot and expanded vessel buyout programs are listed in Table 24.

To be eligible for the buyout program, the vessels' owner must have possessed a limited access multispecies permit. In the pilot buyout program eligibility was limited to a subset of limited access permit categories. In the expanded buyout program, eligibility was opened to all limited access permit categories. The vessel owners were required to demonstrate that at least 65% of fishing revenue was derived from landings of regulated groundfish species in three of four years from 1991 to 1994, and that their vessel was capable of fish-

ing under its own power in Federal waters.

The bidding was done by a reverse auction, in which each vessel owner was required to prepare a bid or price at which he/she would be willing to render the vessel in an unfishable condition and surrender all Federal fishing permits. Selection of vessels was based on a hierarchical ranking of the ratio of the bid to the vessel's groundfish revenue. This criterion was selected to provide a means for comparing bids across dissimilar vessels. Numerous alternative ranking or scoring methods were discussed based on various combinations of vessel characteristics and groundfish landings or revenues. In the end, average yearly groundfish revenue was believed to be a reasonable proxy for fishing power. It was also easy for applicants to compute their scores. Each vessel was ranked from lowest to highest according to this ratio and selections were made in this order until all budgeted monies were consumed. Owners of selected vessels

were then notified and given an opportunity to reconsider. Mutually accepted bids continued on to closure proceedings. Otherwise the vessel was dropped from consideration and the next highest ranked vessel was selected.

Prior to closure, the vessel owner was required to show that the vessel was being scrapped, or sunk or (in the case of the expanded buyout program) committed to some nonfishing use. Vessel owners were required to surrender all Federal fishing permits and to pay any costs associated with scrapping or transferring the vessel, including legal or accounting costs and, paying liens, debts, or taxes. The owner had to consider these costs, together with possible income from the sale of vessel equipment (gear, electronics, etc.) in developing the bid amount. Vessel owners were not required to surrender their right to re-enter the multispecies fishery or enter any other fishery provided they could purchase a vessel with the appropriate permits.

## DESCRIPTIVE STATISTICS

### Vessels Removed

Of the original \$27 million budgeted for the vessel buyouts, \$2 million was set aside to fund a health insurance program for Northeast fishermen. An additional, \$0.6 million was used for administrative expenses of the expanded buyout program, leaving \$24.4 million for the actual purchase of groundfish vessels. With these funds, 79 vessels were removed; 11 from the pilot buyout and 68 from the expanded buyout program. The average bid for retired vessels was \$308,734 and ranged from a low of \$50,000 to a high of \$1 million. The average score of retired vessels was 0.922 which means that, on average, vessel owners thought the value of their vessel was approximately equal to one year of groundfish revenue (using 1991 to 1994 revenue).

The majority of vessels were either scrapped (62) or sunk (7). Scrapping required permanent disassembly while sinking was to be done in an ecologically safe manner. In addition, transfer to a non-fishing use was permitted in the expanded buyout program. A vessel could be transferred to "...a U.S. public entity, a U.S. nonprofit organization, or a foreign national government for research (in-

Table 25. Number of vessels retired by owners' state and city/region of residence

| State         | Vessels | City/Region | Vessels |
|---------------|---------|-------------|---------|
| Massachusetts | 55      | New Bedford | 19      |
| Maine         | 19      | Gloucester  | 11      |
| Rhode Island  | 1       | Cape Cod    | 11      |
| New Hampshire | 3       | Portland    | 8       |
| New York      | 1       | Other       | 30      |

Table 26. Characteristics of retired vessels

| Vessel Characteristic         | Average | Minimum | Maximum |
|-------------------------------|---------|---------|---------|
| Gross registered tons         | 100     | 5       | 198     |
| Age when retired (years)      | 21.7    | 6       | 69      |
| Propulsion engine horse power | 502     | 160     | 1,125   |
| Vessel length (feet)          | 64.9    | 35      | 105     |

cluding fisheries research), education, training, humanitarian, safety, or law enforcement purposes." (published in *U.S. Federal Register* August 28, 1996; 61:168:44300). Transfers required (1) a provision in the title that the vessel be scrapped once the purpose for which it was transferred had been completed, and (2) a permanent restriction prohibiting that vessel from holding a fishery endorsement. Ten vessels were transferred in accordance with these requirements.

The number of retired vessels by state and city are listed in Table 25. The state and city were determined according to the vessel owners' address as listed on the permit application. The majority of vessels were

from Massachusetts (55) and Maine (19). Table 26 provides descriptive statistics for vessel characteristics for vessels that were removed by the buyout program. Retired vessels averaged 100 GRT but ranged from a minimum of 5 GRT to a maximum of 198 GRT. The average age of the vessel was 21.7 years but newer vessels (6 years of age) as well as considerably older vessels (69 years) were retired. The main engine horsepower averaged 502 hp but ranged from 160 to 1,125 hp. Overall vessel length averaged 64.9 feet and ranged from 35 to 105 feet.

The trawl was the dominant gear used by buyout program vessels (60). Eighteen vessels reported using gillnet

Table 27. Impacts of removing vessels through the pilot and expanded buyout programs measured by yearly revenue (R, millions of dollars), landings (P, million pounds), based on annual averages from 1994-1996, and effort removed (based on 1996)

|                              | R & P<br>All Species Landed |        | R & P<br>Landings<br>of 10 Regulated<br>Groundfish Species<br>Only |        | Allocated and Used<br>DAS for<br>Limited Access<br>Vessels, 1996 |        | Allocated and Used<br>Ton-Days'<br>Limited Access<br>Vessels, 1996 |           |
|------------------------------|-----------------------------|--------|--|--------|--|--------|--|-----------|
|                              | Dollars                     | Pounds | Dollars  | Pounds | Allocated  | Used   | Allocated  | Used      |
| Average per buyout vessel    | \$0.3                       | 0.4    | \$0.2  | 0.2    | 152.9  | 111.8  | 15,911   | 13,539    |
| Total for all buyout vessels | \$23.9                      | 35.3   | \$17.4   | 16.7   | 12,083   | 8,831  | 1,256,963  | 1,069,564 |
| Fleet totals                 | \$268.9                     | 434.2  | \$85.7   | 82.9   | 248,988  | 52,508 | 12,378,349   | 4,794,924 |
| Percent Removed              | 8.9%                        | 8.1%   | 20.3%  | 20.1%  | 4.9%   | 16.8%  | 10.2%  | 22.3%     |

<sup>1</sup>Ton-days were calculated as the product of gross registered tons and days at sea

gear as a primary gear type and one vessel reported using some combination of otter trawl and gillnet gear. Of the 79 vessels, 41 held individual days-at-sea allocation permits, 36 held fleet days-at-sea permits, and 2 held combination groundfish and scallop permits.

## IMPACTS OF REMOVAL

As described earlier, both the vessel's multispecies permit and all other federal fishing permits were removed in the buyout process. Thus, while the primary impact of the vessel buyout was on groundfish, the program provided relief to other Northeast fisheries as well. With respect to groundfish, the impact of removing 79 vessels can be assessed using several different indicators. These indicators are the removal of: annual average (1994 to 1996) pounds and revenue of all species, average annual pounds and revenue of the 10 regulated groundfish species, 1996 allocated and used days-at-sea, and 1996 allocated and used ton-days (*i. e.* days-at-sea multiplied by GRT). The nominal value of these indicators, and their percentage of the entire groundfish fleet, are reported in Table 27. The vessels in the expanded program were removed in the latter part of 1997, so their pounds, revenue, and effort are reflected in the total fleet figures. Since the pilot program vessels were removed during 1995, their estimated activity was added to the fleet totals for 1995 and 1996.

The first two rows of Table 27 report averages and totals for all buyout vessels. The third row reports totals for all multispecies vessels including open access permit holders and buyout vessels and the fourth row reports the percentage reduction in each indicator attributable to the buyout. Based on 1994 to 1996 data, the 79 buyout vessels on average accounted for \$23.9 million in gross revenues and 35.3 million pounds landed annually for all species. Total gross revenues and landings for all multispecies vessels were \$268.9

Table 28. Additional permits held by retired vessels

| Permit Category                   | Vessels | Permit Category    | Vessels |
|-----------------------------------|---------|--------------------|---------|
| General category bluefin          | 56      | Ocean quahog       | 36      |
| Incidental category bluefin       | 1       | Scup               | 10      |
| Private category bluefin          | 19      | Commercial lobster | 71      |
| General category scallop          | 69      | Charter lobster    | 1       |
| Limited access scallop            | 2       | Summer flounder    | 42      |
| Surf clam                         | 43      | Shark              | 3       |
| Atl. mackerel/ <i>Illex</i> squid | 54      | Black sea bass     | 2       |
| <i>Loligo</i> squid/butterfish    | 53      | Swordfish          | 1       |

Table 29. Average (1994-1996) yearly pounds landed and revenue earned by retired vessels from species other than groundfish

| Permit Category | Vessels | Average Pounds | Average Revenue |
|-----------------|---------|----------------|-----------------|
| Bluefin Tuna    | 11      | 444            | \$3,998         |
| Sea scallops    | 17      | 1,933          | \$1,531         |
| Mackerel        | 41      | 4,107          | \$565           |
| Squids          | 16      | 24,620         | \$12,382        |
| Butterfish      | 14      | 1,084          | \$436           |
| Scup            | 15      | 981            | \$591           |
| Lobster         | 45      | 2,470          | \$9,991         |
| Summer flounder | 44      | 3,204          | \$4,964         |
| Shark           | 33      | 414            | \$348           |
| Black sea bass  | 13      | 409            | \$355           |
| Monkfish        | 79      | 82,276         | \$45,056        |
| Small mesh      | 60      | 7,080          | \$2,336         |
| Other species   | 79      | 137,227        | \$23,760        |

million and 434.2 million pounds, respectively. Thus, the impact of the buyout on all species was a reduction of 8.9% of total industry revenues and 8.1% in landings.

Since the buyout was designed to remove groundfish vessels, the impact of the buyout is greater on groundfish landings and revenues than the impact on landings of all species combined. On average, the 79 buyout vessels accounted for \$17.4 million

in gross revenues and 16.7 million pounds landed annually of the 10 regulated species managed under the Multispecies FMP. Total gross revenues and landings of the 10 regulated species by all multispecies vessels were \$85.7 million and 82.9 million pounds, respectively. As a percentage of total groundfish revenue the buyout vessels accounted for 20.3% or 20.1% in terms of pounds landed.

Impact measures based on landings and revenues provide a useful indicator of the short-run impacts of the buyout program; but the amount of allowable effort removed provides a more useful indicator of potential longer term benefits. Two indicators of effort removal are considered. First, measured simply as removed days-at-sea, the vessel buyout removed the equivalent of 4.9% of all allocated days and 16.8% of all days that were actually used based on data for the 1996 multispecies fishing year (May 1, 1996 to April 30, 1997). An alternative measure that combines fishing time with some proxy for differential fishing power across vessels is a ton-day. Calculated as ton-days, the buyout program removed the equivalent of 10.2% of the allocated total and 22.3% of actual days that were used during the 1996 fishing year. Note that the impact on fishing effort measured in terms of total allocated ton-days is proportionally larger than the same measure based on used fishing time. This difference is due to the fact that the buyout vessels were, on average, larger vessels as compared to the remaining vessels. Consequently, removing these larger vessels resulted in a proportionally larger reduction in potential fishing effort.

The reduction in allocated days measures the permanent reduction in potential fishing effort, while the reduction in used days represents what may be thought of as an intermediate term impact. That is, while the total number of allocated days may be expected to remain relatively constant over time, changes in the rates at which fishing time is used may be expected to fluctuate. As groundfish stocks recover, for example, use rates for allocated days might be expected to increase. Further examination of Table 27 provides some useful insights into this problem of activation of "latent effort", *i.e.* effort that was previously not used or underused. For the groundfish fleet, only 21.1% of the fleet's allocated days-at-sea were used in 1996 (38.7% if ton-days are used). This indicates that given

changes in resource or market conditions it would be possible for the remaining vessels to increase their effort and fill the void left by the buyout vessels. However, with the declining allocations under Amendment 7, this will become less of a problem. Also, some of these vessels receive an allocation but have fished very little or not at all for a number of years. It is likely that at least some of these vessels would increase their effort under more favorable resource conditions.

The buyout program was designed to remove vessels that concentrated on groundfish, but since the surrender of all federal fishing permits was required, additional benefits accrued to other fisheries. Table 28 provides numbers of other federal fishery permits surrendered by the retired vessels. In all, 463 federal fishery permits were surrendered in addition to 79 multispecies permits. Of these, most vessels held a commercial lobster permit and a general category scallop permit. Other permits held by at least 70% or more vessels included general category bluefin tuna and Atlantic mackerel/squid/butterfish permits. Average annual landings and revenues associated with the permits listed in Table 28 is reported in Table 29.

Given the relatively low cost of acquiring and keeping permits, any given vessel might hold several different permits over extended periods without using them. Thus, the number of vessels that actually recorded landings of a given species was often less than the number of permits held for that species. For example, even though nearly every vessel held a lobster permit, only 45 of the 71 vessels with a lobster permit actually reporting having landed lobsters between 1994 and 1996 (Table 29). Where the number of vessels reporting landings is greater than the number of vessels holding a particular permit, the landings by nonpermitted vessels is probably bycatch where vessels are held to some trip limit. Landings of monkfish and small-mesh

groundfish (red hake, silver hake, and ocean pout) are also reported in Table 29, even though they are landed under a multispecies permit. Monkfish was the most important alternative species landed by the buyout vessels.

## CONCLUSIONS

Both the pilot and expanded buyouts achieved their goals of 1) providing a means for distressed groundfishermen to exit the fishery, and 2) conserving the resource by permanently removing groundfish vessels and their related permits. By design, the buyouts successfully removed vessels that were very active in the groundfish fishery. To the extent vessels were active in other fisheries, the buyouts also removed actual and potential effort in those fisheries. The bidding and ranking process also encouraged vessel owners to submit bids at their lowest acceptable level. The problem of latent effort is unresolved. There is the potential for remaining vessels to increase their groundfish activity and erode some buyout benefits. The potential extent of this problem remains to be determined.

## For further information

Fisheries of the United States [issued annually; covering 1964-1982]. Issues prior to 1970 were prepared by U. S. Fish and Wildlife Service and are available via interlibrary loan. Issues since 1970 are available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.